Talha Karasu

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Education

Istanbul Technical University   **2024 – 2029**
Bachelor's Degree, Robotics and Autonomous Systems Engineering

Eskisehir Anatolian High School   **2020 – 2024**

Experience

Software Team Member   **(1 year) Oct 2024 – Present**
ITU Autonomous Underwater Vehicle Team   *Istanbul, Turkey*

- Contributing to the development of AUV software using ROS, C++, and Python
- Worked on modern perception models (YOLO, RF-DETR), and their adaptations into underwater environments
- Designed and tuned control stacks, including hydrodynamic-compensated multi-DoF PID and LQR/MPC
- Implemented EKF-based localization for reliable odometry in noisy underwater environments
- Worked on the thruster/vehicle system identification pipeline and transferred identified parameters into simulation (Real2Sim)
- Achieved 3rd place at RoboSub 2025

Robotics Mentor   **(4 years) Sep 2021 – Present**
FIRST Robotics Competition (FRC) – Teams 9483 / 8828   *Turkey*

- Co-founded Team 8828, raising $20,000+ in sponsorships; later mentored Team 9483 to become FRC 2024 Houston World Championship Division Winners
- Gained experience with advanced control algorithms for pose estimation and trajectory following, mainly using Java, also worked on electronic systems utilizing CAN Bus
- Built a Progressive Web App (PWA) with Vue.js to collect and analyze scouting data, directly influencing match strategies

Web Developer Intern   **(7 mos) Jun 2022 – Dec 2022**
Kodesis Automation   *Eskisehir, Turkey*

- Developed and optimized web interfaces for automation projects using Vue.js
- Worked on real-time data from multiple automation systems, streaming it into a unified interface for enhanced monitoring
- Learned to manage tasks within a structured, real-world environment with deadlines

Languages

Turkish — Native   —   **English** — High Proficiency